SPECIAL REPORT

of the

ACADEMIC MATTERS AND
PROGRAM AND BUDGET COUNCILS

concerning

REVISION OF THE ACTUARIAL CONCENTRATION IN THE
MATHEMATICS AND STATISTICS MAJOR

Presented at the
747th Regular Meeting of the Faculty Senate
April 9, 2015

COUNCIL MEMBERSHIP

ACADEMIC MATTERS COUNCIL


PROGRAM AND BUDGET COUNCIL

ACADEMIC MATTERS COUNCIL

This proposal seeks to revise the Actuarial Concentration in the Mathematics and Statistics major. The proposed changes are meant to meet professional society requirements and ensure consistency with other concentrations in the major. The changes are: (1) Replace OIM 240 with STAT 525 as a required course. This change is being made to satisfy the Validation by Educational Experience requirement of the Society of Actuaries; (2) Change the required number of upper-division Math/Stat courses from four to three. This will result in a total of 8 upper-division Math/Stat courses in the Actuarial Concentration, which is consistent with the other concentrations in the major; and (3) Add STAT 526 to the concentration’s elective list.

At its meeting on March 4, 2015, the Academic Matters Council voted unanimously to recommend Faculty Senate approval of the proposed changes in the Actuarial Concentration in the Mathematics and Statistics Major. It was submitted as proposal #1635 in the Course and Curriculum Management System.

PROGRAM AND BUDGET COUNCIL

This proposal updates the requirements within the Actuarial Concentration in the Mathematics and Statistics major. It will make Stat 525 a requirement within the concentration. This is necessary in order to satisfy the Validation by Educational Experience (VEE) requirement of the Society of Actuaries. There are no additional resources required to implement this change.

At its meeting on March 25, 2015, the Program and Budget Council unanimously approved the Revision of the Actuarial Concentration in the Mathematics and Statistics Major.

MOVED: That the Faculty Senate approve the Revision of the Actuarial Concentration in the Mathematics and Statistics Major, as presented in Sen. Doc. No. 15-038.
Proposal Development

A. Briefly describe the Proposal.

This proposal is to update the Actuarial Concentration to reflect changes in two requirements: 1) OIM 240 (formerly FinOp 250) will no longer be required; and 2) in its place, Stat 525 will move from being a possible elective to a requirement. Since Stat 525 will now be required, the number of required upper-division Math/Stat electives will change from four to three, so that the total number of upper-division Math/Stat courses remains 8, which is consistent with the other concentrations within the Math/Stat major. Two minor changes are that Stat 526 will be added to the elective list and Stat 597 will be clarified to mean Stat 597A on the elective list.

B. Provide a brief overview of the process for developing the Proposal.

Stat 525 is an advanced course on linear regression, a course which is necessary to satisfy the Validation by Educational Experience (VEE) requirement by the Society of Actuaries. At the moment, we advise students to take this course. But it is so fundamental that we would now like to require it. Previously OIM 240 could satisfy the VEE requirement, but it is not advanced enough and the Society of Actuaries has now disallowed it. Therefore, OIM 240 will no longer be part of the Actuarial Concentration requirements.

Purpose and Goals

Describe the proposal’s purpose and the particular knowledge and skills to be acquired.

The purpose is to update the concentration to reflect the VEE requirements, as determined by the Society of Actuaries. Students will also benefit from taking a more advanced course on linear regression (Stat 525).

Resources

If this proposal requires no additional resources, say so and briefly explain why. If this proposal requires additional resources, explain how they will be paid for. For proposals involving instruction, indicate how many new enrollments are expected and whether the courses have room to accommodate them.

No additional resources.
Provide a curriculum outline showing degree program requirements, requirements of any existing concentrations, requirements of proposed concentration, and how they relate. You may include this outline and any additional documents as attachments.

MATH/STATS MAJORS CHECKLIST
ACTUARIAL Concentration (proposed)

Currently OIM 240 is required and Stat 525 is a choice for one of four electives. The main change is that OIM 240 will be dropped and will be replaced by Stat 525. Finally, Stat 526 is added to the list of allowable electives and Stat 597 is specified to be Stat 597A. The number of required upper-level Math/Stat electives drops to three since Stat 525 becomes required. The requirement of 8 upper-level Math/Stat courses overall is consistent with the other Math/Stat concentrations.

Lower Division:
- Calculus I/II: Math 131 and Math 132
- Calculus III: Math 233
- Linear Algebra: Math 235
- Programming: CS 121
- Intro Abstract Math: Math 300
- Junior Year Writing: Math 370

VEE (Validation by Educational Experience):
- Economics: Econ 103 and Econ 104
- Corporate Finance: Fin 301
- Linear Regression: Stat 525

Upper Division:
- Probability: Stat 515
- Statistics: Stat 516
- Math Finance: Math 441 (to be renumbered Math 537 pending Provost’s approval)
- Actuarial Exam Courses: Math 437 or Math 438

Three electives from the following list:
- Math 331 or 532, 425, 456, 523, 545, 551, Stat 526, Stat 597A, Fin 422